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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,055	07/30/2003	Jim Walthall	DJW-19002/01	8181
25006	7590	10/25/2004	EXAMINER	
GIFFORD, KRASS, GROH, SPRINKLE ANDERSON & CITKOWSKI, PC 280 N OLD WOODARD AVE SUITE 400 BIRMINGHAM, MI 48009			FRANK, ELLIOT L	
		ART UNIT		PAPER NUMBER
		2125		
DATE MAILED: 10/25/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/630,055	WALTHALL, JIM	
	<b>Examiner</b>	<b>Art Unit</b>	
	Elliot L Frank	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 30 July 2003.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,2,6,8-15 and 18 is/are rejected.

7) Claim(s) 3-5,7,16,17,19 and 20 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 30 July 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892) \*

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/16/2004.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. New formal drawings will be required subject to the allowance of this application.

Figures 1-8 are hand drawn and/or numbered. These drawings do not conform to USPTO requirements. While these drawings are acceptable for the analysis of the application, pending allowance the applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the Patent and Trademark Office no longer prepares new drawings.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “66” has been used to designate both a process step and an oxidizing bath. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

3. The abstract of the disclosure is objected to because the examiner believes that the abstract may be more than 150 words. The abstract should be a narrative description of the invention 50-150 words in length. The purported merits of the invention should be omitted. Correction is required. See MPEP § 608.01(b).
4. The disclosure is objected to because of the following informalities:
  - a. Page 14, line 5 – The reference number “66” has been used to indicate both a process step in Figure 2 and an oxidizing bath in Figure 6.
  - b. Appropriate correction is required.

***Claim Objections***

5. Claim 2 is objected to because of the following informalities: It is suggested that claim 2 be rewritten as follows:
  - a. 2. The method as described in claim 1, further comprising the step of preparing the surface of said three-dimensional solid prior to machining.
  - b. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1,6,8,15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dundorf (USPN 5,703,782 A) in view of English et al. (USPN 3,857,025).

The limitations of the aforementioned claims, and the applicable citations in Dundorf as follows:

1. A method for creating three-dimensional engraving (column 1, lines 10-35 wherein the carving of signs is described), comprising the steps of:

    providing a three-dimensional solid having a specified shape and size (column 22, lines 61-67 wherein various workpieces are discussed);

    scanning, into a processor driven and numerically controlled machining center, data corresponding to a three-dimensional illustration (the scanning of a three-dimensional image into a machining center is read at column 20, line 36-column 21, line 7);

    projecting, into said solid, said three-dimensional illustration (the image to be cut is projected onto the stock material in the form of a diagram showing material to be removed at column 19, lines 14-44);

    machining, in three-dimensional fashion, a three-dimensional surface within said solid corresponding to said illustration (column 5, lines 15-42 wherein the entire scanning and machining process is described); [and

        shading said three-dimensional surface of said selected depths of machining.  
        solid according to selected depths of machining].

6. The method as described in claim 1, said step of projecting said three-dimensional illustration further comprising assigning a depth of cut per pixel

distributed across a selected machining area (Dundorf discloses a CAD system at column 13, line 61-column 14, 14 wherein the depth of cut for the entire object is represented by color in an engineering drawing. Since the cut depths of the entire object are represented, and the drawing is displayed on a pixel by pixel basis, the cut depths for each pixel are assigned across the entire area to be machined).

8. The method as described in claim 1, said step of machining further comprising machining a roughing cut in a first direction, and subsequently machining a finishing cut in a second direction (column 2, lines 25-65 wherein multi-pass machining is described to be well-known in the art at the time the invention was made).

15. The method as described in claim 1, said step of machining further comprising engraving said solid (column 5, lines 15-42 wherein the process of carving various indicia in the stock material is described).

While Dundorf describes machining a stock piece of material at various depths, it does not specifically discuss the requirement of claim 1 wherein machining the workpiece at selected depths creates shading.

English et al., analogous to Dundorf in that both systems are used to carve or engrave material via CNC control (column 1, lines 4-7), reads on shading requirements of claim 1 at column 11, lines 49-63 wherein varying the Z direction etch depth is used to alter the shaded appearance of the engraving cut.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the elements of English et al. into Dundorf to have duplicated the visual effects, pleasing pattern, detail geometry and surface

finish of a cut made by an hand engraver in an automated fashion (English et al., column 1, lines 18-27).

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dundorf (USPN 5,703,782 A) in view of English et al. (USPN 3,857,025) as applied to claim 1 above, and further in view of Nohara et al. (USPN 5,947,182 A).

Claim 2 depends from claim 1. Claim 1 is obvious in view of the combined Dundorf and English et al. references.

The previously combined references do not read on the additional requirements of claim 2 as follows:

2. The method as described in claim 1 further comprising the step of surface preparing said three-dimensional solid prior to machining.

Nohara et al., analogous to Dundorf and English et al. in that all three references deal with metal working and computer control (Nohara et al., column 1, lines 11-30) reads on the additional requirements of claim 2 at column 1, lines 44-50 wherein it describes a well-known process wherein an iron-oxide scale must be removed from metal prior to machining.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teaching of Nohara into the system of the previously combined references to have removed a surface contaminant from the outside of the metal in order to provide a product ready for machining (Nohara et al., column 1, lines 44-50).

9. Claims 9-14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dundorf (USPN 5,703,782 A) in view of English et al. (USPN 3,857,025) as applied to claim 1 above, and further in view of Hokazono et al. (USPN 6,063,480 A).

Claims 11-15 depend from claim 1. Claim 1 is obvious in view of the combined Dundorf and English et al. references.

The previously combined references do not read on the additional requirements of claims 9-15 wherein:

Claims 9-11 describe an oxidizing process where the workpiece is immersed in an oxidizing bath, immersed in a neutralizing solution and then cleaned by abrasion.

Claims 12-15 require a process to apply an environmental coating to the workpiece wherein a powderized and thermosetting acrylic urethane is applied and then baked to set the coating.

Hokazono et al., analogous to Dundorf and English et al. in that it discusses the processing of ornamental metal (Hokazono et al., column 1, lines 5-25), reads on the additional requirements of claims 9-15 at column 1, lines 29-34, wherein a process for creating an artificial “patina” via a chemical coloring treatment on metal which is subsequently covered with a protective resin layer is disclosed as being well known in the art at the time the invention was made.

Claim 18 is a product by process including a process made of the requirements in claims 1,6,8,9,11,12 and 14. Therefore, claim 18 is at least obvious in view of the same citations in the combined references.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the elements of Hokazono et al. into the system of the previously combined references to have provided a method for artificially creating an aesthetically pleasing appearance on a metallic object that would have otherwise taken many years to manifest (Hokazono et al., column 1, lines 11-28).

### ***Allowable Subject Matter***

10. Claims 3-5,7,16,17,19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

- a. Claim 3 includes a requirement for forming recessed surfaces on a non-machined surface of the solid to be machined that was not anticipated or made obvious by the prior art of record.
- b. Claim 7 depends from claim 3, and claim 19 has the same functional requirements as claim 3. Therefore, these claims also contain allowable subject matter.
- c. Claims 4 and 5 include requirements for securing fastener receiving mounting studs to the non-machined surface of the solid, for instance by welding. These claims were not anticipated or made obvious by the prior art of record.
- d. Claim 20 has the same functional requirements as claims 4 and 5 combined, and therefore contains allowable subject matter.

- e. Claims 16 and 17 include specific depth limitations for machining the workpiece that were not anticipated or made obvious by the prior art of record.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 2001/0044668 A1 – Kimbrough et al. – Scanning and machining system

USPN 4,553,334 – Fell – Mounting apparatus

USPN 4,875,966 – Perko – Mounting apparatus

USPN 5,064,321 – Barnes – Tooling plate

USPN 5,575,099 A – Strobel et al. – Etching system

USPN 6,322,636 B1 – Matsugu – Artificial Patina

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elliot L Frank whose telephone number is (571) 272-3739. The examiner can normally be reached on M-F 8-5:00 (flex).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P Picard can be reached on (571) 373-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ELF  
22 October 2004



ELLIOT FRANK  
PATENT EXAMINER